Weston&Sampson®

Weston & Sampson Engineers, Inc.
100 Foxborough Blvd. Suite 250
Foxborough, Massachusetts 02035
www.westonandsampson.com
Tel: (508) 698-3034 Fax: (508) 698-0843

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MEMORANDUM

TO: Jeff Chelgren/Mark Bobrowski

FROM: Laurence F. Keegan, Jr., PE

DATE: April 10, 2012

SUBJECT: Penguin Hall Limited Traffic Evaluation

The Penguin Hall site, on Essex Street, near Grapevine road in Wenham, MA has seen 87 years of differing site use from a private residence to a novitiate for the Archdiocese of Boston to a corporate training center to an insurance agency to the Mullen Advertising agency. The 50 acre site is now proposed to be occupied by 230 (+/-) Over 55, Non-assisted Living units.

From a traffic generation standpoint units of Senior Adult Housing (by ITE Trip Generation Manual, 8th Edition, Land Use 252 Senior Adult Housing – Attached, consists of attached independent living developments including retirement communities, age-restricted housing and active adult communities) is considered a non-peak hour generator. The peak hour of these facilities do not typically coincide with the peak hour of the adjacent street. The peak hours generally range from 8:30AM to 12 noon and 1:00PM to 6:00 PM.

Based on the proposed 230 units, the AM Peak Hour (one hour between 7-9AM) on Essex Street and adjacent streets is anticipated to generate approximately 30 vehicle trips (11 in and 19 out) from the site and the PM Peak Hour (one hour between 4-6PM) on Essex Street and adjacent streets is anticipated to generate approximately 39 vehicle trips (23 in and 16 out) from the site (see attached backup from ITE).

The number of vehicle trips anticipated to be generated by this facility during the morning and evening peak hours of adjacent roadway operation are relatively small and are not considered large enough in volume to cause undue hardship on the adjacent roadway network or markedly reduce the Level of Service (LOS) on nearby intersections.

If further questions arise regarding actual effect of this development on the LOS of nearby intersections a more in depth traffic counting program may be initiated in which actual manual turning movements are counted at each intersection. The vehicle trips from this development are then distributed to the area intersections and the LOS is calculated. If the volumes are equally split to the left and right of the access driveway the number of vehicles added to each local intersection will be in the order of 15 vehicles in the AM Peak Hour and 20 vehicles in the PM Peak Hour, still a minor addition to the existing traffic flow.

Land Use: 252
Senior Adult Housing—Attached

Description

Senior adult housing consists of attached independent living developments, including retirement communities, age-restricted housing and active adult communities. These developments may include limited social or recreational services. However, they generally lack centralized dining and on-site medical facilities. Residents in these communities live independently, are typically active (requiring little to no medical supervision) and may or may not be retired. Senior adult housing—detached (Land Use 251), congregate care facility (Land Use 253) and continuing care retirement community (Land Use 255) are related uses.

Additional Data

The peak hour of the generator typically did not coincide with the peak hour of the adjacent street traffic. The a.m. peak hour of the generator typically ranged from 8:30 a.m. to 12:00 p.m. and the p.m. peak hour of the generator typically ranged from 1:00 p.m. to 6:00 p.m.

The sites were surveyed between the 1980s and the 2000s in California, Illinois, Pennsylvania, New Jersey and Canada.

Source Numbers

237, 272, 501, 576, 602

Senior Adult Housing - Attached
(252)

(230 UNITS)

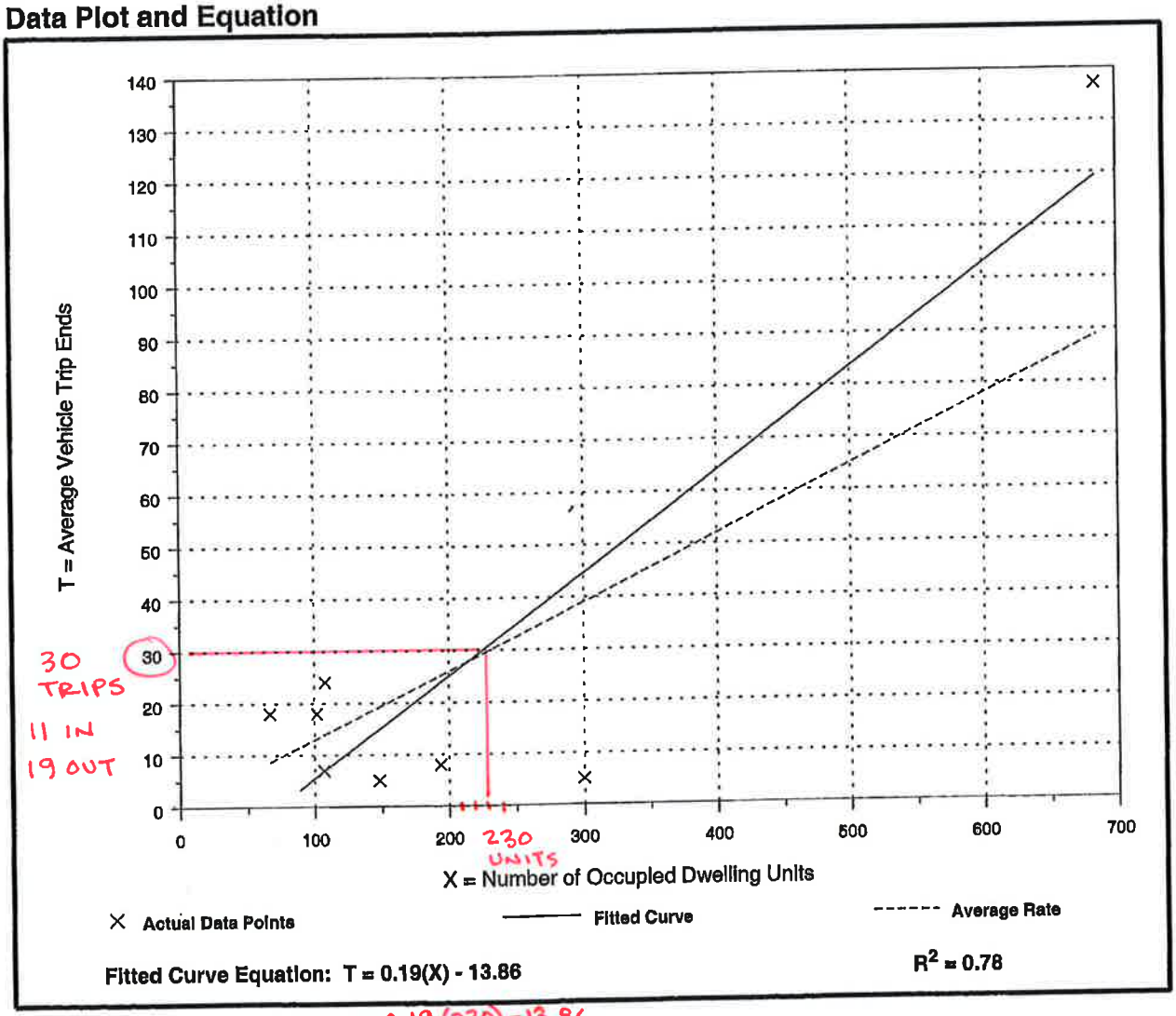
Average Vehicle Trip Ends vs: Occupied Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 8
Avg. Num. of Occupied Dwelling Units: 214
Directional Distribution: 36% entering, 64% exiting

Trip Generation per Occupied Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.13	0.02 - 0.27	0.37

Data Plot and Equation



Fitted Curve Equation: T = 0.19(X) - 13.86

R^2 = 0.78

= 0.19(230) - 13.86
= 29.84 TRIPS
≈ 30 TRIPS

Senior Adult Housing - Attached
(252)

(230 UNITS)

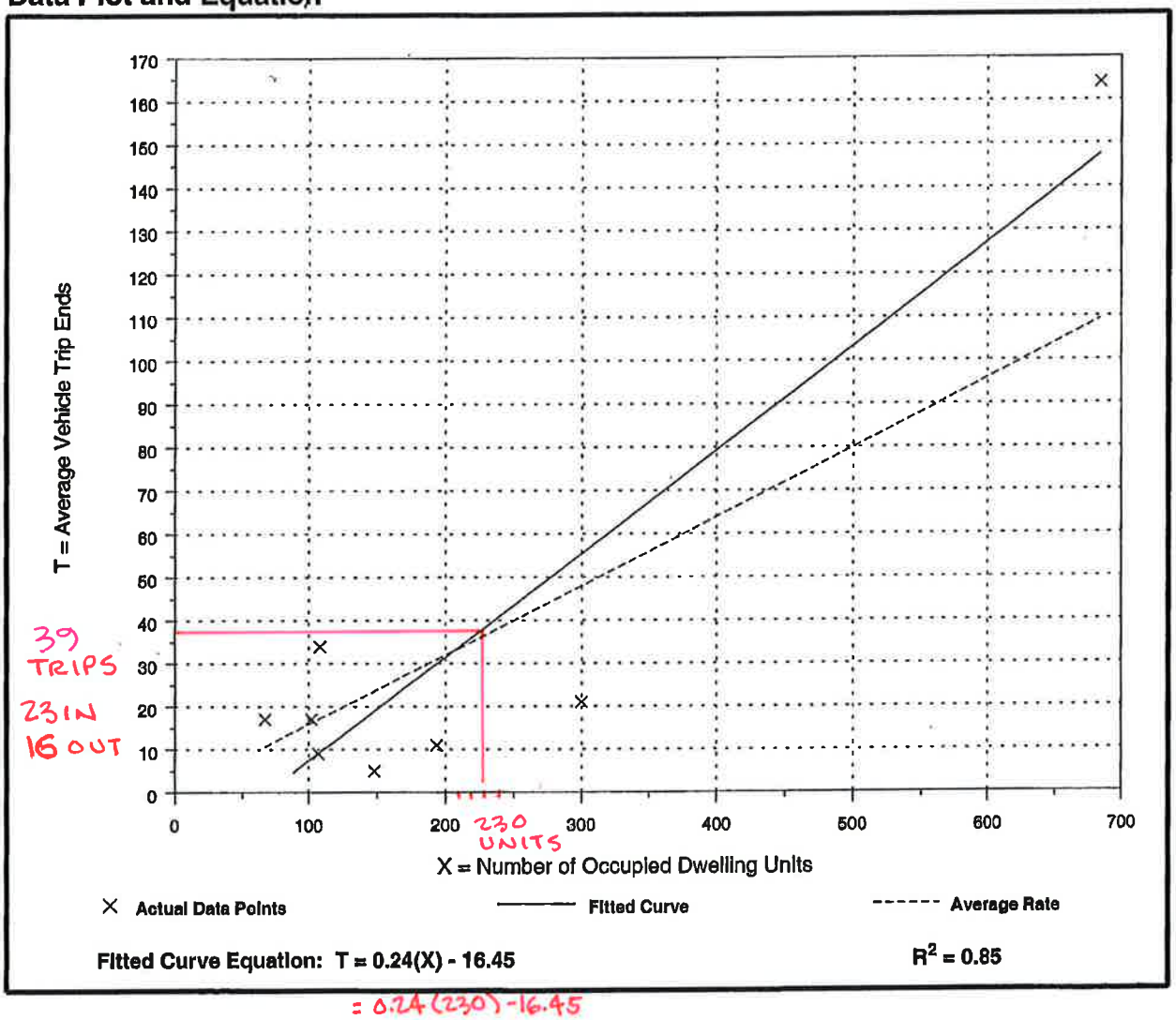
Average Vehicle Trip Ends vs: **Occupied Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 8
Avg. Num. of Occupied Dwelling Units: 214
Directional Distribution: 60% entering, 40% exiting

Trip Generation per Occupied Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.16	0.03 - 0.31	0.41

Data Plot and Equation



Fitted Curve Equation: $T = 0.24(X) - 16.45$

$R^2 = 0.85$

$= 0.24(230) - 16.45$
$= 38.75$
≈ 39 TRIPS